

Appl. No. 10/549,576
Amdt. dated February 16, 2010
In conjunction with the filing of an RCE

REMARKS

Claims 22-23, 25-27, 29-35 and 37-45 are now in this application.

By prior amendment claim 22 has been revised by the incorporation of the language of former claim 29.

Claim 44 is a combination of claims 22 and 23, and thus claim 44 is identical in content to former claim 23.

Claim 45 has been added, which new claim 45 recites that the adjusting shim 4 is within the cup shaped recess 2a of the insert, and that the diameter of the steplike transition of the subregions of the valve holder and the diameter of the adjusting shim are sized relative to each other so as to hold the adjusting shim within the cup shaped recess. This is a feature which has not previously been recited in the claims. However, it is clear that this detail is not found in any of the cited references, and in comparison to the cited prior art clearly cannot properly be rejected.

In the Final Office action of October 16, 2009 the examiner rejected:

claim 22 as unpatentable over Cadman et al. in view of Ichikawa et al.

claims 22-23 and 31 as unpatentable over Jay et al. in view of Cadman et al. and Ichikawa et al.,

claims 25, 27, 29, 30, and 32-38 as unpatentable over Jay et al. in view of Cadman et al. Weirich, and Ichikawa et al.,

claims 39, 41 and 42 as unpatentable over Jay et al. in view of Cadman et al., Weirich, Ichikawa et al., and Yie,

claim 40 as unpatentable over Jay et al. in view of Cadman et al., Weirich, Ichikawa et al., and Lindeboom,

claim 26 as unpatentable over Jay et al. in view of Cadman et al., Weirich, Ichikawa et al., and Lauer et al., and

claims 36 and 43 as unpatentable over Jay et al. in view of Cadman et al., Platt and Ichikawa et al.

Because the language of former claim 29 has been incorporated into claim 22, the rejection of claim 22 as unpatentable over Cadman et al. in view of Ichikawa et al. is now moot.

Thus all of the rejections under consideration start with a combination of the references to Jay et al., Cadman et al. and Ichikawa et al. as they are applied in the rejection of claims 22, 23 and 31. But even this base rejection is not a valid rejection because the claims all call for a pressure limiting valve which **consists of** only five individual parts, a valve holder, a valve insert, a valve piston, a compression spring and an adjusting shim. But there is no teaching within any of these three references that an operative pressure limiting valve could be made from only five elements of structure.

For example, Jay et al., the base reference for this rejection, includes bolt 18 and their respective nuts, plates 14 and 15, casing 10, spring 28, shim 25, piston 26. In other words, a minimum of 8 parts. And this is giving Jay et al. the benefit of the doubt by counting the various bolts and nuts only once. In actuality, there would have to be multiple bolts and nuts to fasten the structure properly. However applicants structure, as recited in claims 22, 31, 44

and 45, all of the independent claims in this application, is **limited** to there being only five parts as opposed to the eight parts of Jay et al.

And the claims specifically limit four of these parts to each being a single piece. Thus, for example, where the examiner has pointed to Jay et al. having a valve holder 14, 15, this clearly is in opposition to the claims which recite the valve holder as being a single piece. And the examiner's rejection has given no answer to this deficiency of the Jay et al. reference.

The examiner has pointed to Cadman et al. as teaching a valve holder 33. But just as the valve holder of Jay et al. requires a second piece 15, the valve holder of Cadman et al. requires a second piece 31. So that even when combined, these references do not meet the requirement of the valve holder being a single piece.

Going further into the examiner's rejection, the examiner has called element 33 of Cadman et al. a valve holder, element 30 a valve insert, 48 a valve piston, 50 a compression spring, and 47 an adjusting shim. Unfortunately for this rejection, the examiner has not realized that only one of these structures, the spring, would work as intended if it were a single piece. Each of the other components requires at least two structural elements to work properly, with several of the components requiring even more than two. For example, the "piston 48" requires the further structure of the second plate 46, the gasket 49, and a bolt which is unnumbered. The "shim 47" also requires a gasket 49 to operate as intended. And one of the valve holder 33 or the insert 30 requires the additional structure of plate 31.

Stated another way, making the piston of Cadman et al. a single piece would mean

eliminating the seals 49, and the bolt shown at the bottom of the piston. But making the piston of Cadman et al. without seals 49 would mean that the piston would not seal when and where it is supposed to seal. And furthermore, trying to make the piston of Cadman et al. without the bolt shown at its bottom would not be possible as without the bolt the piston would not hold together.

And the disk 47 according to the Cadman et al. reference cannot properly be compared with the adjusting shim 4 of the present invention. According to the present invention, an edge between a component 2 and the piston 3 forms the hydraulic seat of the valve. By means of said adjusting shim 4, manufacturing tolerances are compensated for in a very simple manner, and the adjusting shim does not form a part of the valve closing structure. Different thicknesses of said adjusting shim 4 change the spring force, and also the distance which said piston 3 must be moved to open or close the valve. As opposed to this arrangement as recited in the claims, according to the Cadman et al. reference, the disk 47 along with gasket 49 is part and parcel of the valve closing structure.

The same argument applies against the structure of Jay et al. The “shim” 25 of Jay et al. is also the structure which closes the valve. “Shim” 25 is not an adjusting shim which changes the closing distance.

And further, the references of Jay et al., Cadman et al. and Ichikawa et al. are all from different art areas. Their art areas are not analogous, and therefore these references are not properly combinable to show obviousness as set forth in 35 USC 103.

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The structure of Jay et al. is a pressure limiting valve.

Cadman et al. is disclosed to be a check valve, meaning that fluid is forced into cavity 38 and the valve element maintains the fluid there. Cadman et al. has nothing whatsoever to do with regulating a pressure, whereas the claims clearly recite that the valve is a pressure regulating valve.

And Ichikawa et al. is not even a valve, it is a flow detector. The structure of Ichikawa et al. never limits or in any way changes the flow of fluid through the structure. The structure of Ichikawa et al. only measures the flow of fluid through the structure. Again, just as for Cadman et al., the structure of Ichikawa et al. does not form a pressure regulating valve, or any other kind valve for that matter.

Thus the three references the examiner has tried to combine are from three different art areas. There is no way that an artisan working in the art area of pressure regulators would look to the flow detector art to improve on the structure of Jay et al., at least not within the meaning of obviousness under 35 USC 103. Thus combining Ichikawa et al. with Jay et al. clearly is not a valid combination of references. And likewise, there is no way that such an artisan would look to a check valve for further improving the pressure regulator of Jay et al., and so combining Cadman et al. with Jay et al. is also not obvious under the meaning of 35 USC 103.

And further, in this base rejection the examiner has gone on to say that it would have been obvious to provide the valve of Jay et al. with flat surfaces on the outer circumference of the piston as taught by Ichikawa et al. Then the examiner has gone on to indicate that finding

the optimum number of flat surfaces would have been an obvious variation. In other words, even combining the reference to Ichikawa et al. into the rejection does not result in the structure as recited in claims 22 and 31.

Effectively what the examiner has done is to modify the reference to Jay et al. in view of the reference to Ichikawa et al., and then has further modified this modification by saying it would have been obvious to add even further surfaces. If the surfaces are not correct with a single modification, it is clearly outside the bounds of obviousness under 35 USC 103 to modify a teaching and then have to further modify this modification. And yet this is exactly what the examiner has done in this part of the rejection.

And still further, for the rejection of claims 31 and 23, the examiner has had to make an even further modification of the modification, in that Jay et al. never teaches three flat faces, whereas claim 31 recites this limitation. Again, it is simply not obvious under the meaning of 35 USC 103 to modify a modification, and yet the rejection of these two claims requires **two** such modified modifications.

But even in spite of all of the above fallacies of the combination of the references to Jay et al, Cadman et al and Ichikawa et al, the limitations from claim 29 have been incorporated into claim 22. Thus, in addition to all of the above, claim 22 additionally recites that there is at least one flat place on the outer cylindrical circumferential surface of the valve piston. This is one more limitation which the prior art, when applied against the claims, is lacking. In this regard the examiner has pointed to surfaces 35 of Jay et al. But it is pointed out that the language of the amended claim 22 includes that the valve piston has an end

surface, and an outer circumferential surface which is generally cylindrical and includes at least one flat place. But the flat surfaces 35 of Jay et al. do not fit this description. Thus here again the examiner's rejection includes another fallacy.

The examiner has rejected claims 25, 27, 29, 30 and 32-38 as unpatentable over the same basic prior art, Jay et al., Cadman et al. and Ichikawa et al., and further has included the additional reference to Weirich. This rejection includes all of the fallacies mentioned above with respect to the rejection of claims 22 and 31, since Weirich does not correct these fallacies.

And according to the present invention as recited in claim 25, the adjusting shim 4, which is being moved upon an opening or closing movement of the piston 3 in upwards and downwards directions, is being guided by the wall of the cup-shaped recess of the valve insert. Plus, by means of the different diameters of the valve holder forming a stepped shoulder which is oriented in a radially inward direction, an abutment for the adjustment shim 4 is formed. This abutment prevents movement of the piston unduly far from its seat. However, according to Figure 2 of the Cadman et al. reference, no housing for the spring element, and no guiding member for the adjusting shim, is disclosed.

According to the present invention as recited in claim 33, the adjusting shim 4 includes a recess 4a which allows fluid to flow through the adjusting shim. This recess 4a thus permits fluid to flow from recess 2a of the valve insert 2 to the subregion 1b of valve holder 1 which houses the spring 5. The examiner has said that the Jay et al. reference has a recess 29, and thus the examiner is saying that this recess 29 is equivalent to applicants'

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recess 4a. Applicants disagree. Applicants' recess 4a directly and always connects the area just below the adjusting shim to the area which houses spring 5. As opposed to this, in Jay et al., when the "shim" 25 is pushed all the way up, recess 29 is closed by the shoulder of the insert 10. And this recess 29 does not connect directly to the area of the spring, but rather to an area which is to the side of the "adjusting shim" 25. Thus the prior art does not show a recess 4a according to the present invention as recited in claim 33.

The examiner has rejected claims 39, 41 and 42 as unpatentable over the same basic prior art, Jay et al., Cadman et al. and Ichikawa et al., this time including the additional references to Weirich and Yie. This rejection includes all of the fallacies mentioned above with respect to the rejection of claims 22 and 31, since neither Weirich nor Yie corrects these fallacies.

As already mentioned above with respect to Cadman et al., Yie is directed towards a check valve. In other words, Yie, like Cadman et al., is from a field of art which is different from applicants', and is also different from the rest of the cited prior art.

The examiner has rejected claim 40 as unpatentable over the same basic prior art, Jay et al., Cadman et al. and Ichikawa et al., but this time adds the additional references to Weirich and Lindeboom. This rejection includes all of the fallacies mentioned above with respect to the rejection of claims 22 and 31, since neither Weirich nor Lindeboom corrects these fallacies.

Although Lindeboom does teach a conical spring such as recited in claim 40, like Wierich and Yie, this does not negate the fallacies in the rejection based on Cadman et al.,

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Jay et al. and Ichikawa et al. Lindeboom does not teach a valve holder, a valve insert, a valve piston, a compression spring and an adjusting shim such as recited in the parent claim.

And as mentioned above with respect to Yie and Cadman et al., the structure of Lindeboom is also for a check valve and therefore is not analogous to the structure recited in the present claims nor in the other cited prior art.

The examiner has rejected claim 26 as unpatentable over the same basic prior art, Jay et al., Cadman et al. and Ichikawa et al., but this time adds the additional references to Weirich and Lauer et al. Again, this rejection includes all of the fallacies mentioned above with respect to the rejection of claims 22 and 31, since neither Weirich nor Lauer et al. corrects them.

And while Lauer et al. does teach caulking two members together, Lauer et al. does not supply the deficiencies of the base references to Jay et al., Cadman et al. and Ichikawa et al.

The examiner has rejected claims 36 and 43 as unpatentable the same basic prior art, Jay et al., Cadman et al. and Ichikawa et al., this time adding the additional reference to Platt et al. Again this rejection includes all of the fallacies mentioned above with respect to the rejection of claims 22 and 31, since Platt et al. does not correct them.

Platt et al. does have, just as the examiner has said, an outlet at an oblique angle. But again, this does not cure the deficiencies of the three base references, Cadman et al., Jay et al. and Ichikawa et al.

In paragraph 20 the examiner has argued that the valve holder 14, 15 of Jay et al. is

being replaced by the single element 33 of Cadman et al. But this is not an appropriate replacement. The two elements 14 and 15 of Jay et al. are so closely equivalent and structurally similar to elements 33 and 31 of Cadman et al., that if replaced, they would be replaced by both of elements 33 and 31 of Cadman et al. Because these elements 33 and 31 of Cadman et al. are so very similar in function and appearance to elements 14 and 15 of Jay et al., it simply does not make sense to replace both elements 14 and 15 with anything other than both of elements 33 and 31 of Cadman et al.

Figure one of the application drawings shows five elements of structure which go to make up this invention. And each of the claims recite that the invention “**consists of**” only these five elements of structure. These five elements of structure are recited with a great deal of specificity, and they are interrelated with each other with a further amount of specificity. And yet, even with only five structural elements, the large amount of detail has forced the examiner into using either four or five references to piece together all of the details of these five elements of structure. For a simple invention, such as the present invention where the claims **limit** the invention to only five elements of structure which come together to make an operative device, when a large number of references must be combined in a convoluted fashion to meet all of the limitations recited in the claims, this large number of references and convoluted reasoning points toward allowability.

While it is true that in some circumstances any number of references can be combined to make a valid rejection, it is always true that the references must combine in an obvious fashion. It is also the case that for simple structures, a large number of references being

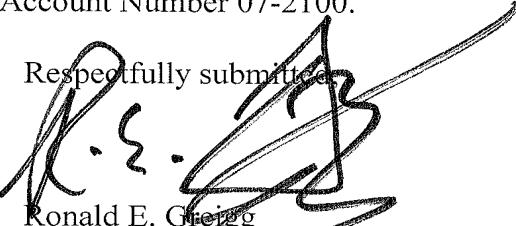
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combined in a convoluted rejection such as the examiner's present rejection, generally points toward allowability.

Moreover, the specification, particularly at paragraph 6, recites the particular advantages of making the valve of the present invention of a very limited number of parts. The advantages obtained by limiting the number of parts of the valve are described for the first time in this application, and are particularly advantageous, in that the valve becomes easier and cheaper to make and operates with far fewer breakdowns, than any valves of the prior art. By being "simple" the valve performs its function without the complications created by more complex arrangements.

For all of the above reasons, whether taken singly or in combination with each other, entry of this amendment and allowance of the claims are courteously solicited.

The Commissioner is authorized to charge payment for any additional necessary fees in connection with this communication to Deposit Account Number 07-2100.


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